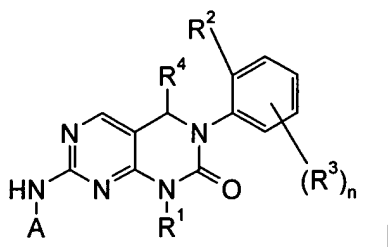


This listing of the claims will replace all prior versions and listings of the claims in this application.

In the Claims:

1. (Original) A compound of formula I



wherein

R¹ represents hydrogen or

alkyl, cycloalkyl, aryl, heteroaryl, arylalkyl or heteroarylalkyl, each of which may be optionally substituted with halogen, hydroxy, cyano, nitro, amino, acylamino, alkyl, alkoxy, alkoxyalkyl, -CONH₂, -SO₂NH₂, -S(O)_m-alkyl, -NH-alkyl, -N(alkyl)₂, -CONH(alkyl), CON(alkyl)₂, -SO₂NH(alkyl), -SO₂N(alkyl)₂;

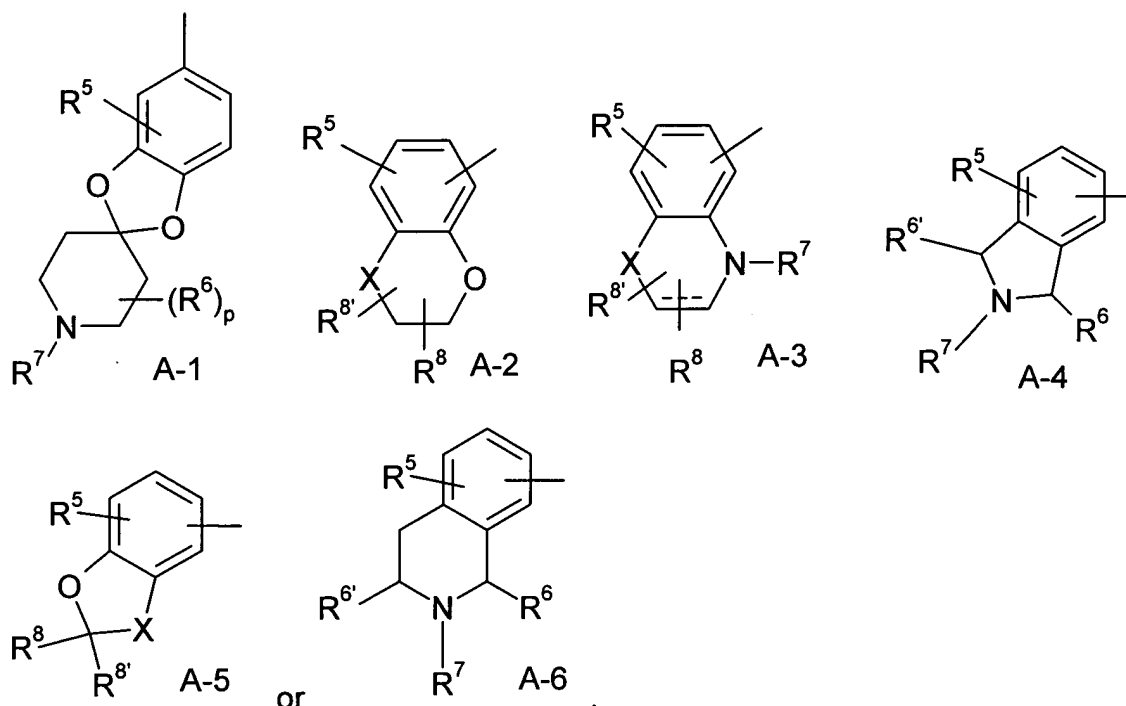
R² represents halogen, cyano or CF₃;

R³ each R³ is independently selected from halogen, hydroxy, cyano, nitro, amino, acylamino, -CONH₂, -SO₂NH₂, -S(O)_m-alkyl, -NH-alkyl, -N(alkyl)₂, -CONH(alkyl), -CON(alkyl)₂, -SO₂NH(alkyl), -SO₂N(alkyl)₂, or

alkyl, alkoxy or alkoxyalkyl, each of which may be optionally substituted with halogen, hydroxy, cyano, nitro, amino, acylamino, alkyl, alkoxy, alkoxyalkyl, -CONH₂, -SO₂NH₂, -S(O)_m-alkyl, -NH-alkyl, -N(alkyl)₂, -CONH(alkyl), CON(alkyl)₂, -SO₂NH(alkyl), -SO₂N(alkyl)₂;

R⁴ represents hydrogen, alkyl, alkoxy or cyano;

A is selected from the group



R^5 is hydrogen, halogen, hydroxy, cyano, amino, acylamino, alkyl, alkoxy, alkoxyalkyl, $-\text{CONH}_2$, $-\text{SO}_2\text{NH}_2$, $-\text{S}(\text{O})_m\text{-alkyl}$, $-\text{NH-alkyl}$, $-\text{N(alkyl)}_2$, $-\text{CONH(alkyl)}$, $-\text{CON(alkyl)}_2$, $-\text{SO}_2\text{NH(alkyl)}$ or $-\text{SO}_2\text{N(alkyl)}_2$;

R^6 , $R^{6'}$ are each independently selected from hydrogen, alkyl or oxo;

R^7 is hydrogen, acyl, alkoxycarbonyl, alkoxyalkyl, alkyl or alkyl substituted with hydroxy, cyano, $-\text{S}(\text{O})_m\text{-alkyl}$, amino, $-\text{NH-alkyl}$ or $-\text{N(alkyl)}_2$;

R^8 , $R^{8'}$ are each independently selected from hydrogen, oxo, alkoxy, alkoxyalkyl, alkyl or

alkyl substituted with hydrogen, hydroxy, cyano, pyrrolidin-1-yl, morpholino, piperazin-1-yl, 4-alkyl-piperazin-1-yl, piperidin-1-yl, $-\text{S}(\text{O})_m\text{-alkyl}$, or a group $\text{NR}^9\text{R}^{9'}$, provided that when either R^8 or $R^{8'}$ represent an oxo group, this oxo group is not adjacent to an $\text{S}(\text{O})_m$ group;

R^9 and $R^{9'}$ are each independently selected from hydrogen, alkyl or cycloalkyl;

X is oxygen or $\text{S}(\text{O})_m$;

the dashed line is an optional second chemical bond;

n is 0, 1 or 2;

m is 0, 1 or 2; and

p is 0, 1 or 2;

or a pharmaceutically acceptable salt or N-oxides thereof.

2. (Original) A compound according to claim 1,
wherein

R¹ represents hydrogen or

alkyl, cycloalkyl, aryl, heteroaryl, arylalkyl, or heteroarylalkyl, each of which may be optionally substituted with halogen, hydroxy, cyano, nitro, amino, acylamino, alkyl, alkoxy, alkoxyalkyl, -CONH₂, -SO₂NH₂, -S(O)_m-alkyl, -NH-alkyl, -N(alkyl)₂, -CONH(alkyl), CON(alkyl)₂, -SO₂NH(alkyl), or -SO₂N(alkyl)₂;

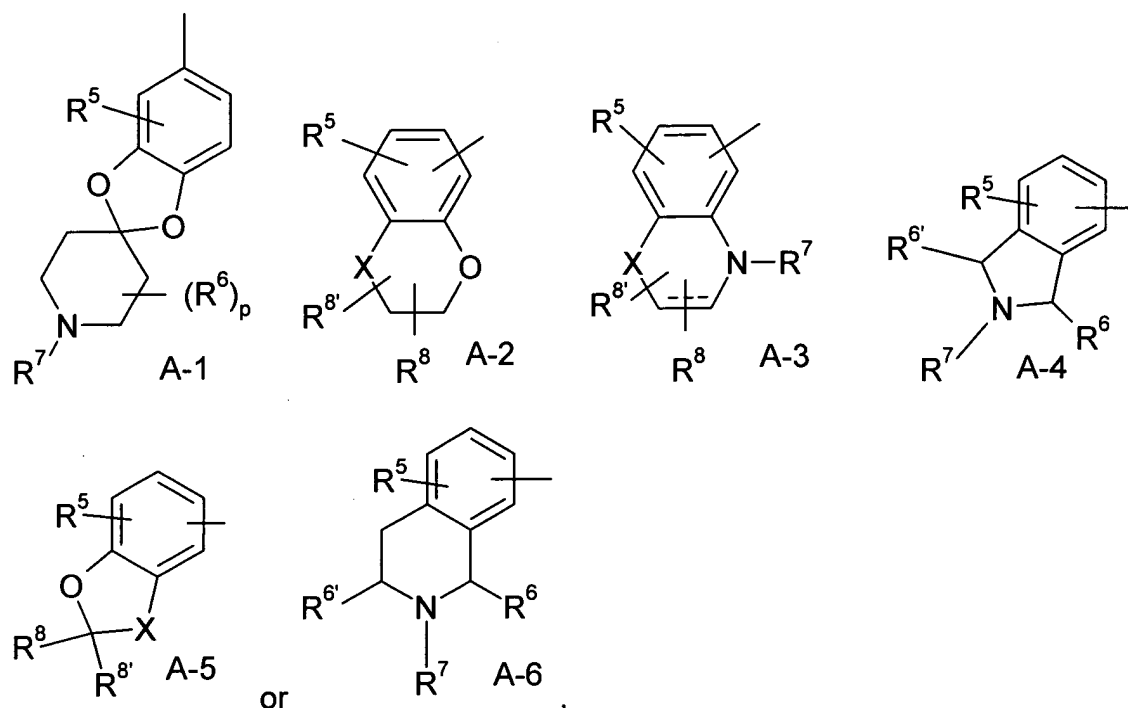
R² represents halogen, cyano or CF₃;

R³ each R³ is independently selected from halogen, hydroxy, cyano, nitro, amino, acylamino, -CONH₂, -SO₂NH₂, -S(O)_m-alkyl, -NH-alkyl, -N(alkyl)₂, -CONH(alkyl), -CON(alkyl)₂, -SO₂NH(alkyl), -SO₂N(alkyl)₂, or

alkyl, alkoxy or alkoxyalkyl, each of which may be optionally substituted with halogen, hydroxy, cyano, nitro, amino, acylamino, alkyl, alkoxy, alkoxyalkyl, -CONH₂, -SO₂NH₂, -S(O)_m-alkyl, -NH-alkyl, -N(alkyl)₂, -CONH(alkyl), CON(alkyl)₂, -SO₂NH(alkyl), or -SO₂N(alkyl)₂;

R⁴ represents hydrogen, alkyl, alkoxy or cyano;

A is selected from



R^5 is hydrogen, halogen, hydroxy, cyano, amino, acylamino, alkyl, alkoxy, alkoxyalkyl, $-\text{CONH}_2$, $-\text{SO}_2\text{NH}_2$, $-\text{S}(\text{O})_m\text{-alkyl}$, $-\text{NH-alkyl}$, $-\text{N(alkyl)}_2$, $-\text{CONH(alkyl)}$, $-\text{CON(alkyl)}_2$, $-\text{SO}_2\text{NH(alkyl)}$ or $-\text{SO}_2\text{N(alkyl)}_2$;

R^6 , $R^{6'}$ are each independently selected from hydrogen, alkyl or oxo;

R^7 is hydrogen, acyl, alkoxycarbonyl, alkoxyalkyl, alkyl or

alkyl substituted with hydroxy, cyano, $-\text{S}(\text{O})_m\text{-alkyl}$, amino, $-\text{NH-alkyl}$ or $-\text{N(alkyl)}_2$;

R^8 , $R^{8'}$ are each independently selected from hydrogen, oxo, alkoxy, alkoxyalkyl, alkyl or

alkyl substituted with hydrogen, cyano, pyrrolidin-1-yl, morpholino, piperazin-1-yl, 4-alkyl-piperazin-1-yl, piperidin-1-yl, $-\text{S}(\text{O})_m\text{-alkyl}$, or a group $\text{NR}^9\text{R}^{9'}$, provided that when either R^8 or $R^{8'}$ represent an oxo group, this oxo group is not adjacent to an $\text{S}(\text{O})_m$ group;

R^9 and $R^{9'}$ are each independently selected from hydrogen, alkyl or cycloalkyl;

X is oxygen or $\text{S}(\text{O})_m$;

the dashed line is an optional second chemical bond;

n is 0, 1 or 2;

m is 0, 1 or 2; and
p is 0, 1 or 2;

or a pharmaceutically acceptable salt or N-oxides thereof.

3. (Original) The compound of claim 2 wherein R^2 is bromine and $n = 0$.
4. (Original) The compound of claim 2 wherein n is 1 and R^2 and R^3 are each independently selected from fluorine, chlorine, bromine or iodine.
5. (Original) The compound of claim 4 wherein R^2 is bromine and R^3 is fluorine.
6. (Original) The compound of claim 5 wherein the R^3 is at the 6-position of the phenyl ring.
7. (Original) The compound of claim 4 wherein R^2 and R^3 are both chlorine.
8. (Original) The compound of claim 2,
wherein
A is selected from A-1, A-2, A-3, A-4, A-5 or A-6;
 R^1 is alkyl or aryl, each of which may be optionally substituted with halogen, hydroxy, cyano, nitro, amino, acylamino, alkyl, alkoxy, alkoxyalkyl, $-\text{CONH}_2$, $-\text{SO}_2\text{NH}_2$, $-\text{S}(\text{O})_m\text{-alkyl}$, $-\text{NH-alkyl}$, $-\text{N(alkyl)}_2$, $-\text{CONH(alkyl)}$, CON(alkyl)_2 , $-\text{SO}_2\text{NH(alkyl)}$, or $-\text{SO}_2\text{N(alkyl)}_2$;
 R^2 is halogen or cyano;
 R^3 each R^3 is independently selected from halogen;
 n is 0 or 1;
 m is 0, 1 or 2;

R⁵ is hydrogen; and
R⁴ hydrogen or methyl; or
a pharmaceutically acceptable salt thereof.

9. (Previously presented) The compound according to claim 8 selected from
7-(Benzo[1,3]dioxol-5-ylamino)-3-(2,4-dichloro-phenyl)-1-(4-methoxy-phenyl)-3,4-
dihydro-1H-pyrimido[4,5-d]pyrimidin-2-one; and
2-[7-(4,4-Dioxo-3,4-dihydro-2H-4λ⁶-benzo[1,4]oxathiin-6-ylamino)-1-methyl-2-
oxo-1,4-dihydro-2H-pyrimido[4,5-d]pyrimidin-3-yl]-benzonitrile.

10. (Original) The compound of claim 2 wherein
A is A-1;
R⁵ is hydrogen;
p is 0;
R¹ is alkyl;
R² is halogen;
R³ is halogen;
n is 0 or 1; and
R⁴ is hydrogen;
or a pharmaceutically acceptable salt thereof.

11. (Original) The compound according to claim 10 which is selected from
3-(2-bromo-phenyl)-3,4-dihydro-7-(1'-acetyl-spiro[1,3-benzodioxolo-2,4'-piperidine]-5-
yl)amino-1-methyl-pyrimido[4,5-d]pyrimidin-2(1H)-one,
3-(2-bromo-phenyl)-3,4-dihydro-7-(1'-ethoxycarbonyl-spiro[1,3-benzodioxolo-2,4'-
piperidine]-5-yl)amino-1-methyl-pyrimido[4,5-d]pyrimidin-2(1H)-one,
3-(2-bromo-6-fluorophenyl)-3,4-dihydro-7-(1'-acetyl-spiro[1,3-benzodioxolo-2,4'-
piperidine]-5-yl)amino-1-methyl-pyrimido[4,5-d]pyrimidin-2(1H)-one,
3-(2-bromo-6-fluorophenyl)-3,4-dihydro-7-(1'-ethoxycarbonyl-spiro[1,3-benzodioxolo-
2,4'-piperidine]-5-yl)amino-1-methyl-pyrimido[4,5-d]pyrimidin-2(1H)-one,

3-(2-bromo-phenyl)-3,4-dihydro-7-(1'-ethyl-spiro[1,3-benzodioxolo-2,4'-piperidine]-5-yl)amino-1-methyl-pyrimido[4,5-d]pyrimidin-2(1H)-one,
3-(2-bromo-phenyl)-3,4-dihydro-7-(1'-(2-methoxyethyl)-spiro[1,3-benzodioxolo-2,4'-piperidine]-5-yl)amino-1-methyl-pyrimido[4,5-d]pyrimidin-2(1H)-one, and
3-(2-bromo-6-fluorophenyl)-3,4-dihydro-7-(1'-(2-methoxyethyl)-spiro[1,3-benzodioxolo-2,4'-piperidine]-5-yl)amino-1-methyl-pyrimido[4,5-d]pyrimidin-2(1H)-one.

12. (Original) The compound according to claim 10 which is selected from
3-(2-bromo-phenyl)-3,4-dihydro-7-(spiro[1,3-benzodioxolo-2,4'-piperidine]-5-yl)amino-1-methyl-pyrimido[4,5-d]pyrimidin-2(1H)-one,
3-(2-bromo-phenyl)-3,4-dihydro-7-(1'-methyl-spiro[1,3-benzodioxolo-2,4'-piperidine]-5-yl)amino-1-methyl-pyrimido[4,5-d]pyrimidin-2(1H)-one,
3-(2-bromo-6-fluoro-phenyl)-3,4-dihydro-7-(spiro[1,3-benzodioxolo-2,4'-piperidine]-5-yl)amino-1-methyl-pyrimido[4,5-d]pyrimidin-2(1H)-one,
3-(2-bromo-6-fluoro-phenyl)-3,4-dihydro-7-(1'-methyl-spiro[1,3-benzodioxolo-2,4'-piperidine]-5-yl)amino-1-methyl-pyrimido[4,5-d]pyrimidin-2(1H)-one,
3-(2-bromo-phenyl)-3,4-dihydro-7-(1'-cyanomethyl-spiro[1,3-benzodioxolo-2,4'-piperidine]-5-yl)amino-1-methyl-pyrimido[4,5-d]pyrimidin-2(1H)-one, and
3-(2-bromo-5-methoxyphenyl)-3,4-dihydro-7-(spiro[1,3-benzodioxolo-2,4'-piperidine]-5-yl)amino-1-methyl-pyrimido[4,5-d]pyrimidin-2(1H)-one.

13. (Original) The compound according to claim 2 wherein
A is a group A-2;
R⁵ is hydrogen;
X is oxygen;
R⁸, R^{8'} are each independently selected from hydrogen or alkyl that optionally may be substituted with cyano, pyrrolidin-1-yl, morpholino, piperazin-1-yl, 4-alkyl-piperazin-1-yl, piperidin-1-yl, -S(O)_m-alkyl, or a group NR⁹R^{9'};
R⁹ and R^{9'} are each independently selected from hydrogen, alkyl or cycloalkyl;
R¹ is alkyl;

R² is halogen;

R³ is halogen;

n is 0 or 1; and

R⁴ is hydrogen;

or a pharmaceutically acceptable salt thereof.

14. (Original) The compound according to claim 13, which is selected from
3-(2-bromo-phenyl)-7-(2,3-dihydro-benzo[1,4]dioxin-6-ylamino)-1-methyl-3,4-dihydro-
1H-pyrimido[4,5-d]pyrimidin-2-one,
3-(2-bromo-phenyl)-1-methyl-7-(2-pyrrolidin-1-ylmethyl-2,3-dihydro-benzo[1,4]dioxin-6-
ylamino)-3,4-dihydro-1H-pyrimido[4,5-d]pyrimidin-2-one,
3-(2-bromo-phenyl)-1-methyl-7-(3-pyrrolidin-1-ylmethyl-2,3-dihydro-benzo[1,4]dioxin-6-
ylamino)-3,4-dihydro-1H-pyrimido[4,5-d]pyrimidin-2-one,
3-(2-bromo-phenyl)-7-(2-dimethylaminomethyl-2,3-dihydro-benzo[1,4]dioxin-6-ylamino)-
1-methyl-3,4-dihydro-1H-pyrimido[4,5-d]pyrimidin-2-one,
3-(2-bromo-6-fluoro-phenyl)-7-(2-dimethylaminomethyl-2,3-dihydro-benzo[1,4]dioxin-6-
ylamino)-1-methyl-3,4-dihydro-1H-pyrimido[4,5-d]pyrimidin-2-one,
3-(2-bromo-phenyl)-7-(3-dimethylaminomethyl-2,3-dihydro-benzo[1,4]dioxin-6-ylamino)-
1-methyl-3,4-dihydro-1H-pyrimido[4,5-d]pyrimidin-2-one,
3-(2-bromo-6-fluoro-phenyl)-7-(3-dimethylaminomethyl-2,3-dihydro-benzo[1,4]dioxin-6-
ylamino)-1-methyl-3,4-dihydro-1H-pyrimido[4,5-d]pyrimidin-2-one,
3-(2-bromo-phenyl)-7-(2-cyclopropylaminomethyl-2,3-dihydro-benzo[1,4]dioxin-6-
ylamino)-1-methyl-3,4-dihydro-1H-pyrimido[4,5-d]pyrimidin-2-one,
3-(2-bromo-phenyl)-1-methyl-7-(2-morpholin-4-ylmethyl-2,3-dihydro-benzo[1,4]dioxin-6-
ylamino)-3,4-dihydro-1H-pyrimido[4,5-d]pyrimidin-2-one,
3-(2-bromo-phenyl)-1-methyl-7-(3-morpholin-4-ylmethyl-2,3-dihydro-benzo[1,4]dioxin-6-
ylamino)-3,4-dihydro-1H-pyrimido[4,5-d]pyrimidin-2-one,
3-(2-bromo-6-fluoro-phenyl)-1-methyl-7-(3-morpholin-4-ylmethyl-2,3-dihydro-
benzo[1,4]dioxin-6-ylamino)-3,4-dihydro-1H-pyrimido[4,5-d]pyrimidin-2-one, and

3-(2-bromo-6-fluoro-phenyl)-1-methyl-7-(3-pyrrolidin-1-ylmethyl-2,3-dihydro-benzo[1,4]dioxin-6-ylamino)-3,4-dihydro-1H-pyrimido[4,5-d]pyrimidin-2-one.

15. (Original) The compound according to claim 1 wherein

A is a group A-2;

R⁵ is hydrogen;

X is oxygen;

R⁸ is hydrogen

R^{8'} is alkyl substituted with hydroxy;

R¹ is alkyl;

R² is halogen;

R³ is halogen;

n is 0 or 1; and

R⁴ is hydrogen;

or a pharmaceutically acceptable salt thereof.

16. (Original) The compound according to claim 15, which is selected from
3-(2-bromo-phenyl)-7-(2-hydroxymethyl-2,3-dihydro-benzo[1,4]dioxin-6-ylamino)-1-methyl-3,4-dihydro-1H-pyrimido[4,5-d]pyrimidin-2-one,
3-(2-bromo-phenyl)-7-(3-hydroxymethyl-2,3-dihydro-benzo[1,4]dioxin-6-ylamino)-1-methyl-3,4-dihydro-1H-pyrimido[4,5-d]pyrimidin-2-one,
3-(2-bromo-6-fluoro-phenyl)-7-(3-hydroxymethyl-2,3-dihydro-benzo[1,4]dioxin-6-ylamino)-1-methyl-3,4-dihydro-1H-pyrimido[4,5-d]pyrimidin-2-one, and
3-(2-bromo-6-fluoro-phenyl)-7-(2-hydroxymethyl-2,3-dihydro-benzo[1,4]dioxin-6-ylamino)-1-methyl-3,4-dihydro-1H-pyrimido[4,5-d]pyrimidin-2-one.

17. (Original) The compound of claim 2 wherein

A is A-2;

R⁵ is hydrogen;

X is S(O)_m;

m is 0, 1 or 2;
R⁸, R^{8'} are hydrogen;
R¹ is alkyl;
R² is halogen;
R³ is halogen;
n is 0 or 1; and
R⁴ is hydrogen;
or a pharmaceutically acceptable salt thereof.

18. (Previously presented) The compound according to claim 17, which is selected from

3-(2-bromo-phenyl)-7-(2,3-dihydro-benzo[1,4]oxathiin-7-ylamino)-1-methyl-3,4-dihydro-1H-pyrimido[4,5-d]pyrimidin-2-one,

3-(2-bromo-phenyl)-7-(4,4-dioxo-3,4-dihydro-2H-4λ⁶-benzo[1,4]oxathiin-7-ylamino)-1-methyl-3,4-dihydro-1H-pyrimido[4,5-d]pyrimidin-2-one,

3-(2-bromo-6-fluoro-phenyl)-7-(4,4-dioxo-3,4-dihydro-2H-4λ⁶-benzo[1,4]oxathiin-6-ylamino)-1-methyl-3,4-dihydro-1H-pyrimido[4,5-d]pyrimidin-2-one, and

3-(2-bromo-phenyl)-7-(4,4-dioxo-3,4-dihydro-2H-4λ⁶-benzo[1,4]oxathiin-6-ylamino)-1-methyl-3,4-dihydro-1H-pyrimido[4,5-d]pyrimidin-2-one.

19. (Original) The compound of claim 2 wherein

A is A-3;
R⁵ is hydrogen;
R⁷ is hydrogen or alkyl;
X is S(O)_m;
m is 0, 1 or 2;
R⁸, R^{8'} are each independently selected from hydrogen, oxo or alkoxy,

provided that when one of R^8 , $R^{8'}$ is oxo the dashed line is absent, and provided further that when R^8 and $R^{8'}$ are selected from hydrogen or alkoxy the dashed line may represent an additional bond to form a double bond;

R^1 is alkyl;

R^2 is halogen;

R^3 is halogen;

n is 0 or 1; and

R^4 is hydrogen;

or a pharmaceutically acceptable salt thereof.

20. (Previously presented) The compound according to claim 19 which is selected from

3-(2-bromo-phenyl)-1-methyl-7-(3-oxo-3,4-dihydro-2H-benzo[1,4]thiazin-7-ylamino)-3,4-dihydro-1H-pyrimido[4,5-d]pyrimidin-2-one,

3-(2-bromo-phenyl)-1-methyl-7-(4-methyl-3-oxo-3,4-dihydro-2H-benzo[1,4]thiazin-7-ylamino)-3,4-dihydro-1H-pyrimido[4,5-d]pyrimidin-2-one,

3-(2-bromo-phenyl)-1-methyl-7-(4-methyl-1,3-dioxo-1,2,3,4-tetrahydro-1H⁴-benzo[1,4]thiazin-7-ylamino)-3,4-dihydro-1H-pyrimido[4,5-d]pyrimidin-2-one,

3-(2-bromo-phenyl)-1-methyl-7-(4-methyl-3,4-dihydro-2H-benzo[1,4]thiazin-7-ylamino)-3,4-dihydro-1H-pyrimido[4,5-d]pyrimidin-2-one,

3-(2-bromo-phenyl)-1-methyl-7-(3-oxo-3,4-dihydro-2H-benzo[1,4]thiazin-6-ylamino)-3,4-dihydro-1H-pyrimido[4,5-d]pyrimidin-2-one,

3-(2-bromo-6-fluoro-phenyl)-1-methyl-7-(4-methyl-3-oxo-3,4-dihydro-2H-benzo[1,4]thiazin-7-ylamino)-3,4-dihydro-1H-pyrimido[4,5-d]pyrimidin-2-one, and

3-(2-bromo-6-fluoro-phenyl)-1-methyl-7-(3-oxo-3,4-dihydro-2H-benzo[1,4]thiazin-6-ylamino)-3,4-dihydro-1H-pyrimido[4,5-d]pyrimidin-2-one.

21. (Previously presented) The compound according to claim 19 which is selected from

3-(2-bromo-phenyl)-1-methyl-7-(4-methyl-3-oxo-3,4-dihydro-2H-benzo[1,4]thiazin-6-ylamino)-3,4-dihydro-1H-pyrimido[4,5-d]pyrimidin-2-one,

3-(2-bromo-phenyl)-7-(3-methoxy-4-methyl-1-oxo-1,4-dihydro-1 λ ⁴-benzo[1,4]thiazin-7-ylamino)-1-methyl-3,4-dihydro-1H-pyrimido[4,5-d]pyrimidin-2-one,

3-(2-bromo-6-fluoro-phenyl)-1-methyl-7-(4-methyl-3-oxo-3,4-dihydro-2H-benzo[1,4]thiazin-6-ylamino)-3,4-dihydro-1H-pyrimido[4,5-d]pyrimidin-2-one,

3-(2-bromo-6-fluoro-phenyl)-1-methyl-7-(4-methyl-1,1-dioxo-1,2,3,4-tetrahydro-1 λ ⁶-benzo[1,4]thiazin-7-ylamino)-3,4-dihydro-1H-pyrimido[4,5-d]pyrimidin-2-one,

3-(2-bromo-phenyl)-1-methyl-7-(4-methyl-1,1-dioxo-1,2,3,4-tetrahydro-1 λ ⁶-benzo[1,4]thiazin-7-ylamino)-3,4-dihydro-1H-pyrimido[4,5-d]pyrimidin-2-one,

3-(2-bromo-phenyl)-1-methyl-7-(4-methyl-1,1,3-trioxo-1,2,3,4-tetrahydro-1 λ ⁶-benzo[1,4]thiazin-7-ylamino)-3,4-dihydro-1H-pyrimido[4,5-d]pyrimidin-2-one, and

3-(2-bromo-6-fluoro-phenyl)-1-methyl-7-(4-methyl-1,1,3-trioxo-1,2,3,4-tetrahydro-1 λ ⁶-benzo[1,4]thiazin-7-ylamino)-3,4-dihydro-1H-pyrimido[4,5-d]pyrimidin-2-one.

22. (Original) The compound of claim 2, wherein
A is A-4;

R⁵ is hydrogen;

R⁶, R^{6'} are each independently selected from hydrogen or oxo;

R⁷ is hydrogen or alkyl that optionally may be substituted with hydroxy, cyano, -S(O)_m-alkyl, amino, -NH-alkyl or -N(alkyl)₂;

R¹ is alkyl;

R² is halogen;

R³ is halogen;

n is 0 or 1;

m is 0, 1 or 2;

R⁴ is hydrogen;

or a pharmaceutically acceptable salts thereof.

23. (Original) The compound according to claim 22 which is selected from 5-[6-(2-bromo-phenyl)-8-methyl-7-oxo-5,6,7,8-tetrahydro-pyrimido[4,5-d]pyrimidin-2-ylamino]-2-methyl-isoindole-1,3-dione, 3-(2-bromo-phenyl)-1-methyl-7-(2-methyl-2,3-dihydro-1H-isoindol-5-ylamino)-3,4-dihydro-1H-pyrimido[4,5-d]pyrimidin-2-one; hydrochloride salt, 5-[6-(2-bromo-phenyl)-8-methyl-7-oxo-5,6,7,8-tetrahydro-pyrimido[4,5-d]pyrimidin-2-ylamino]-isoindole-1,3-dione, 5-[6-(2-bromo-6-fluoro-phenyl)-8-methyl-7-oxo-5,6,7,8-tetrahydro-pyrimido[4,5-d]pyrimidin-2-ylamino]-2-methyl-isoindole-1,3-dione, and 3-(2-bromo-6-fluoro-phenyl)-7-[2-(2-hydroxy-1,1-dimethyl-ethyl)-2,3-dihydro-1H-isoindol-5-ylamino]-1-methyl-3,4-dihydro-1H-pyrimido[4,5-d]pyrimidin-2-one; hydrochloride.

24. (Original) The compound of claim 2, wherein

A is A-5;

R⁵ is hydrogen;

X is oxygen;

R⁸, R^{8'} are each independently selected from hydrogen or alkyl;

R¹ is alkyl;

R² is halogen;
R³ is halogen;
n is 0 or 1; and
R⁴ is hydrogen; or
a pharmaceutically acceptable salt thereof.

25. (Original) The compound according to claim 24 which is
7-(benzo[1,3]dioxol-5-ylamino)-3-(2-bromo-phenyl)-1-methyl-3,4-dihydro-1H-
pyrimido[4,5-d]pyrimidin-2-one.

26. (Original) A compound of claim 2, wherein
A is A-5';
R⁵ is hydrogen;
X is S(O)_m;
m is 0, 1 or 2;
R⁸, R^{8'} are each independently selected from hydrogen or alkyl;
R¹ is alkyl;
R² is halogen;
R³ is halogen;
n is 0 or 1; and
R⁴ is hydrogen; or
a pharmaceutically acceptable salt thereof.

27. (Previously presented) The compound according to claim 26 which is
selected from

3-(2-bromo-6-fluoro-phenyl)-7-(3,3-dioxo-2,3-dihydro-3λ⁶-benzo[1,3]oxathiol-5-ylamino)-
1-methyl-3,4-dihydro-1H-pyrimido[4,5-d]pyrimidin-2-one, and

3-(2-bromo-phenyl)-7-(3,3-dioxo-2,3-dihydro-3λ⁶-benzo[1,3]oxathiol-5-ylamino)-1-
methyl-3,4-dihydro-1H-pyrimido[4,5-d]pyrimidin-2-one.

28. (Original) The compound of claim 2, wherein
A is A-6,
R⁵ is hydrogen;
R¹ is alkyl;
R² is halogen;
R³ is halogen;
n is 0 or 1; and
R⁴ is hydrogen; or
a pharmaceutically acceptable salt thereof.

29. (Previously presented) The compound according to claim 28 which is selected from

3-(2-Bromo-5-methoxy-phenyl)-7-(4,4-dioxo-3,4-dihydro-2H-4λ⁶-benzo[1,4]oxathiin-6-ylamino)-1-methyl-3,4-dihydro-1H-pyrimido[4,5-d]pyrimidin-2-one,

7-(4,4-Dioxo-3,4-dihydro-2H-4λ⁶-benzo[1,4]oxathiin-6-ylamino)-3-(2-fluoro-6-methoxy-phenyl)-1-methyl-3,4-dihydro-1H-pyrimido[4,5-d]pyrimidin-2-one,

3-(2-Bromo-phenyl)-7-(4,4-dioxo-3,4-dihydro-2H-4λ⁶-benzo[1,4]oxathiin-6-ylamino)-1,4-dimethyl-3,4-dihydro-1H-pyrimido[4,5-d]pyrimidin-2-one; enantiomer 1,

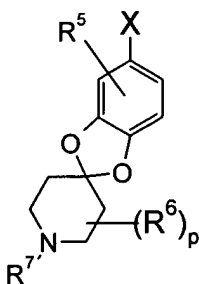
3-(2-Bromo-phenyl)-7-(4,4-dioxo-3,4-dihydro-2H-4λ⁶-benzo[1,4]oxathiin-6-ylamino)-1,4-dimethyl-3,4-dihydro-1H-pyrimido[4,5-d]pyrimidin-2-one; enantiomer 2,

3-(2-Bromo-phenyl)-1,4-dimethyl-7-(4-methyl-1,1,3-trioxo-1,2,3,4-tetrahydro-1λ⁶-benzo[1,4]thiazin-7-ylamino)-3,4-dihydro-1H-pyrimido[4,5-d]pyrimidin-2-one; enantiomer 2,

3-(2-Bromo-phenyl)-1,4-dimethyl-7-(4-methyl-1,1,3-trioxo-1,2,3,4-tetrahydro-1 λ^6 -benzo[1,4]thiazin-7-ylamino)-3,4-dihydro-1H-pyrimido[4,5-d]pyrimidin-2-one; enantiomer 1, and

2-[7-(4,4-Dioxo-3,4-dihydro-2H-4 λ^6 -benzo[1,4]oxathiin-6-ylamino)-1-methyl-2-oxo-1,4-dihydro-2H-pyrimido[4,5-d]pyrimidin-3-yl]-3-fluoro-benzonitrile.

30. (Original) A compound of the formula A-1-I,



A-1-I

wherein

R⁵ is hydrogen, halogen, hydroxy, cyano, amino, acylamino, alkyl, alkoxy, alkoxyalkyl, -CONH₂, -SO₂NH₂, -S(O)_m-alkyl, -NH-alkyl, -N(alkyl)₂, -CONH(alkyl), -CON(alkyl)₂, -SO₂NH(alkyl) or -SO₂N(alkyl)₂;

R⁶ each R⁶ is independently selected from hydrogen, alkyl or oxo;

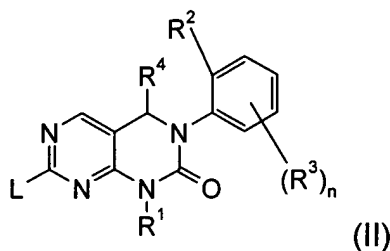
R⁷ is hydrogen, acyl, alkoxycarbonyl, alkoxyalkyl, alkyl or alkyl substituted with hydroxy, cyano, -S(O)_m-alkyl, amino, -NH-alkyl or -N(alkyl)₂;

m is 0, 1 or 2;

p is 0, 1 or 2; and

X is NO₂ or an optionally protected NH₂ group.

31. (Currently amended) A process for the preparation of a compound of formula I comprising
reacting a compound of formula



wherein

R^1 represents hydrogen or

alkyl, cycloalkyl, aryl, heteroaryl, arylalkyl, or heteroarylalkyl, each of which may be optionally substituted with halogen, hydroxy, cyano, nitro, amino, acylamino, alkyl, alkoxy, alkoxyalkyl, $-CONH_2$, $-SO_2NH_2$, $-S(O)_m$ -alkyl, $-NH$ -alkyl, $-N(alkyl)_2$, $-CONH(alkyl)$, $CON(alkyl)_2$, $-SO_2NH(alkyl)$, or $-SO_2N(alkyl)_2$;

R^2 represents halogen, cyano or CF_3 ;

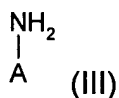
R^3 each R^3 is independently selected from halogen, hydroxy, cyano, nitro, amino, acylamino, $-CONH_2$, $-SO_2NH_2$, $-S(O)_m$ -alkyl, $-NH$ -alkyl, $-N(alkyl)_2$, $-CONH(alkyl)$, $-CON(alkyl)_2$, $-SO_2NH(alkyl)$, $-SO_2N(alkyl)_2$, or

alkyl, alkoxy or alkoxyalkyl, each of which may be optionally substituted with halogen, hydroxy, cyano, nitro, amino, acylamino, alkyl, alkoxy, alkoxyalkyl, $-CONH_2$, $-SO_2NH_2$, $-S(O)_m$ -alkyl, $-NH$ -alkyl, $-N(alkyl)_2$, $-CONH(alkyl)$, $CON(alkyl)_2$, $-SO_2NH(alkyl)$, or $-SO_2N(alkyl)_2$;

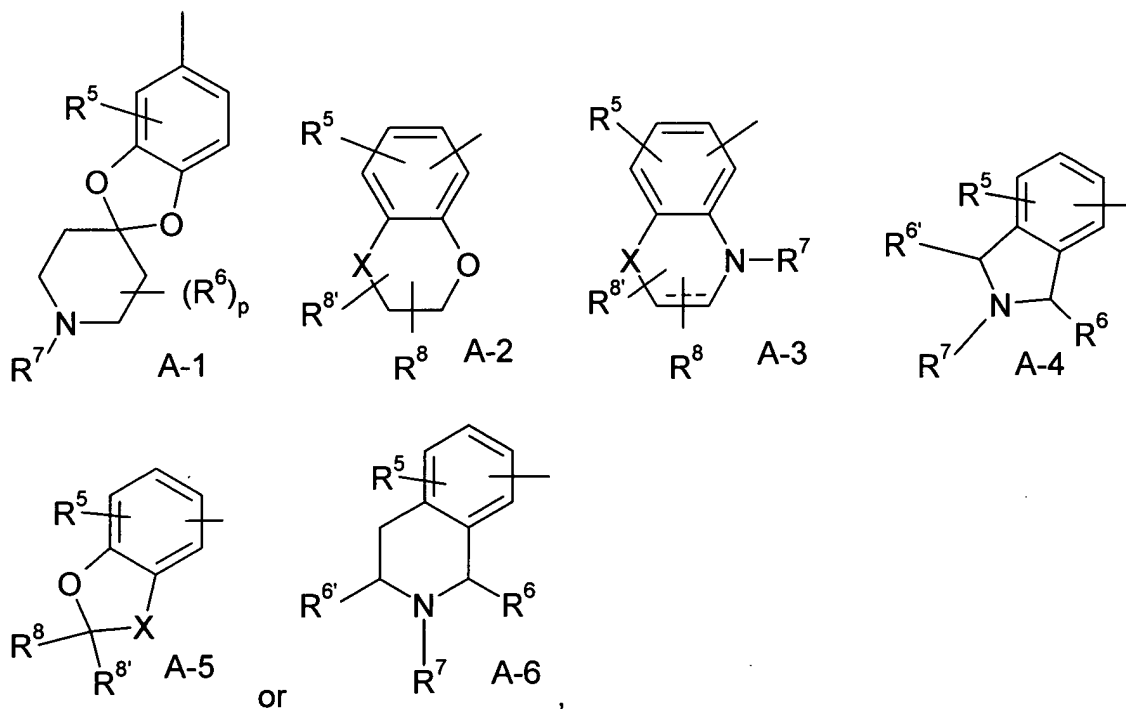
R^4 represents hydrogen, alkyl, alkoxy or cyano; and

L signifies a leaving group selected from benzylsulphonyl, phenylsulphonyl, alkanesulphonyl, p-tolylsulfonyloxy, methanesulfonyloxy, trifluoromethanesulfonyloxy, chloro, bromo, iodo, and fluoro;

with an amine of the general formula



wherein A is selected from



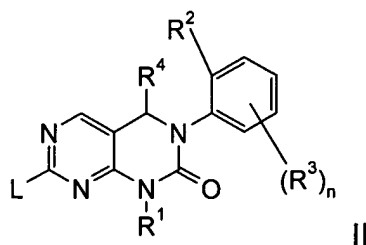
and R^5 , R^6 , R^7 , R^8 , R^8' and p have the meanings given in claim 2.

32. (Currently amended) The process of claim 31 wherein the leaving group L is selected from ~~benzylsulphonyl, phenylsulphonyl, alkanesulphonyl, p-tolylsulfonyloxy, methanesulfonyloxy, trifluoromethanesulfonyloxy, chloro, bromo, and iodo, or fluoro.~~

33. Canceled.

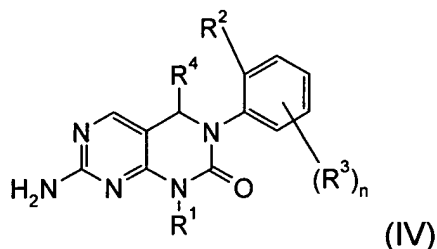
34. (Currently amended) A process for the preparation of a compound of formula I, comprising

(a) reacting a compound of formula II



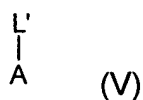
with ammonia or protected ammonia;

(b) cleaving any optional protecting group from the resulting compound of step (a) to give a compound of formula (IV);



and

(c) reacting the compound of formula (IV) with a bicyclic compound of formula



wherein, in the above formulas

R¹ represents hydrogen or alkyl, cycloalkyl, aryl, heteroaryl, arylalkyl, or heteroarylalkyl, each of which may be optionally substituted with halogen, hydroxy, cyano, nitro, amino, acylamino, alkyl, alkoxy, alkoxyalkyl, -CONH₂, -SO₂NH₂, -S(O)_m-alkyl, -NH-alkyl, -N(alkyl)₂, -CONH(alkyl), CON(alkyl)₂, -SO₂NH(alkyl), or -SO₂N(alkyl)₂;

R² represents halogen, cyano or CF₃;

R^3 each R^3 is independently selected from halogen, hydroxy, cyano, nitro, amino, acylamino, $-\text{CONH}_2$, $-\text{SO}_2\text{NH}_2$, $-\text{S}(\text{O})_m\text{-alkyl}$, $-\text{NH-alkyl}$, $-\text{N(alkyl)}_2$, $-\text{CONH(alkyl)}$, $-\text{CON(alkyl)}_2$, $-\text{SO}_2\text{NH(alkyl)}$, $-\text{SO}_2\text{N(alkyl)}_2$, or

alkyl, alkoxy or alkoxyalkyl, each of which may be optionally substituted with halogen, hydroxy, cyano, nitro, amino, acylamino, alkyl, alkoxy, alkoxyalkyl, $-\text{CONH}_2$, $-\text{SO}_2\text{NH}_2$, $-\text{S}(\text{O})_m\text{-alkyl}$, $-\text{NH-alkyl}$, $-\text{N(alkyl)}_2$, $-\text{CONH(alkyl)}$, $-\text{CON(alkyl)}_2$, $-\text{SO}_2\text{NH(alkyl)}$, or $-\text{SO}_2\text{N(alkyl)}_2$;

R^4 represents hydrogen, alkyl, alkoxy or cyano;

n is 0, 1 or 2;

m is 0, 1 or 2;

L and L' independently represent a leaving group selected from benzylsulphonyl, phenylsulphonyl, alkanesulphonyl, p-tolylsulfonyloxy, methanesulfonyloxy, trifluoromethanesulfonyloxy, chloro, bromo, iodo, and fluoro; and

A has the meaning given in claim 2.

35. (Currently amended) The process of claim 34 wherein the leaving group L' is selected from chloro, iodo, p-tolylsulfonyloxy, and methanesulfonyloxy, and trifluoromethanesulfonyloxy.

36. (Currently amended) The process of claim 34 wherein the reaction of Compound (IV) with Compound (V) may be catalyzed catalyzed by a transition metal catalyst.

37. (Previously presented) The process of claim 34 further comprising converting a basic compound of formula I synthesis into a pharmaceutically acceptable salt using an acid, or converting an acidic compound of formula I into a pharmaceutically acceptable salt using a base.

38. (Currently amended) The process of claim 34 further ~~comprising~~converting ~~comprising~~ converting the resulting compound of formula I into a an N-oxide by oxidation with an oxidizing agent.

39. (Original) The process of claim 38 wherein the oxidizing agent is selected from 3-chloro-perbenzoic acid, trifluoroperacetic acid, or dimethyldioxiran.

40. (Original) A pharmaceutical composition comprising a compound of formula I and a pharmaceutically acceptable adjuvant.

41. (Canceled) ~~A method of treating an inflammatory, immunological or CNS disorders comprising administering to a patient in need of such treatment a therapeutically effective amount of at least one compound of claim 1.~~

42. (Canceled) ~~A method of treating bone disease comprising administering to a patient in need of such treatment a therapeutically effective amount of at least one compound of claim 1.~~

43. (Canceled) ~~A method of treating cancer comprising administering to a patient in need of such treatment a therapeutically effective amount of at least one compound of claim 1.~~